



# DNR Tanks Update

Iowa Department of Natural Resources

Spring 2005

## UST regulations face proposed changes

The DNR is asking Iowa underground storage tank (UST) owners and operators to review and comment on proposed rule changes to UST regulations.

### Why change?

Regulations are usually amended because they are either out of date, technology improves or problems arise. In many cases, regulations are

The DNR doesn't want the owner/operator to lose eligibility to file a claim after insurance is cancelled. A rule change becomes necessary to remedy this.

Many times a new owner/operator fails to submit a change of ownership form to the DNR. The DNR sends the tank tag application to the former owner and the tank management fee goes unpaid.

The new owner is assessed a \$250 late fee and UST insurance is cancelled because he or she didn't receive the notice to pay the annual premium and file a change of ownership with the insurance company.

You guessed it: new regulations are needed that make sure sellers talk to buyers about the UST requirements.

What happens when some installations of ball



A number of rule changes regarding UST regulations have been developed in the last two years.

These amendments to UST regulations (567-135 Iowa Administrative Code) include input from DNR customers, including tank owners and operators, as well as petroleum equipment dealers and other stakeholders who are affected by DNR UST regulations.

insufficient or not specific enough to address certain problems.

### Resolving problems

For example, how long should a tank be able to remain temporarily closed? Regulations state UST insurance must be maintained for the life of the system, and yet insurance companies cancel policies after one year of temporary closure.

*Continued on page 5*

### In this issue:

2  
Keeping water out of ethanol;  
Sump sensors;  
Flex connectors;  
Selling the business

3  
UST budget options;  
New closure benefit available;  
Secondary and remote sensors

4  
Converting to E-85

5  
DNR on the Web

6  
Spill buckets

7  
Most violated UST regulations

8  
Flex connectors

## To comment on the proposed regulations

Attend one of the following public hearings:

May 31: Coralville, Coralville Public Library, 1 p.m.

June 1: Denison, Norelius Public Library, 1 p.m.

June 2: Des Moines, Wallace State Office Building, Fourth Floor, 1 p.m.

You may also e-mail comments to [Paul.Nelson@dnr.state.ia.us](mailto:Paul.Nelson@dnr.state.ia.us).

To view the proposed regulations, go to the UST Section's Web site:

[www.iowadnr.com/land/ust/](http://www.iowadnr.com/land/ust/) and click on "Proposed Rules" in the left-hand column. Those

without Web access can contact Bonnie Garrison at (515) 281-6010 for a copy of the proposed rules.

## Selling the business?

Remember, if you are selling your business, make sure to inform the buyer about UST regulatory requirements, including financial responsibility.

In the proposed rules, the owner/operator must notify the DNR of the name, address and phone number of the new owner/operator within 10 days.

The new owner/operator must submit a change of ownership form (148 form) within 15 days of transfer of ownership. The owner must also contact the UST insurance carrier to transfer benefits.

## Prevent water from entering tanks containing ethanol

If there's water in your ethanol tank, remove it and prevent it from occurring again.



Ethanol is soluble in gasoline and especially soluble in water. Think of alcohol and water: they mix easily.

If there is water in the bottom of an ethanol tank, much of the ethanol will leave the gasoline layer and dissolve in the water instead.

This can lead to a problem called phase separation, where the gasoline and ethanol split into two separate layers.

Phase separation causes problems with tank systems and a vehicle's fuel system because the gasoline no longer has the optimal mixture.

Corrosion can also be aggravated by phase separation because of the ethanol/water layer on the bottom of the steel tank.

No level of water is acceptable in an ethanol tank.

## Sensors that don't make sense

Here's another item inspectors have noticed and for which violations are issued: pressurized line leak detection using sump sensors.

When there is product loss in double walled piping, the leaking product is supposed to flow through the secondary pipe into the sump where the sensor is located.

Annual function tests must be conducted on the sensor, just as a line leak detector.



Sump sensors need to have annual function tests performed. However, sensors mounted too high, like the one above, are a violation.

Sumps must be kept clean and free of debris so as not to interfere with leak detection.

Sensors must also be placed in the lowest point of the sump where product can accumulate, not midway and not near the top. That's not leak detection.

Water infiltrating the sump is not an excuse for moving the sensor. You must either prevent the water from entering or find another method of leak detection.

Moving the sensor high up in the sump is a failure to conduct line leak detection.

## Stainless steel flex connectors can corrode

If a stainless steel flex connector is buried and not above ground in a sump, it must be isolated from the backfill or cathodically protected (usually with a spike anode).

If the DNR sees a buried, unprotected flex connector, it will require you to replace it, isolate it from the backfill or externally protect it.

## UST program searches for budget options

Unlike other states' UST programs that are funded through taxes and fees, the Iowa UST program is funded through a portion of the tank management fee (23 percent – the remainder goes to the UST Fund) and a federal UST grant from the EPA. The two funding sources make up 31 percent of the UST program budget.

To make up the budget balance, the UST program had relied on carryover funds, which are now depleted.

Carryover funds were used to support the field presence for facility inspections, spill investigations, emergency response and citizen complaints, among other things.

With these carryover funds depleted, the DNR must determine how to support itself in the long-term while maintaining its legislative requirements.

Last spring, stakeholders participated in meetings to help resolve the budget shortfall.

The meeting resulted in an UST Program Service Plan, which proposed a third party inspection program and identifying potential funding sources for the long term.

The only funding sources still being considered are UST Fund Board assistance and retaining the entire tank management fee.

A technical advisory committee will form to draft rules for the inspection program, and we will update you on the progress of the proposal.

## New UST closure benefit available

If you have had an eligible UST Fund benefit claim, you may also be eligible for the costs associated with the removal of your upgraded tank.

In order to be eligible for these costs with your UST Fund benefit claim, a few criteria must be met.

First, the tank to be removed must have been in place when you

originally filed the UST Fund claim.

Second, you must be both the Fund claimant and the owner or operator of the tank(s) to be removed.

Even if your UST Fund claim is closed because you have reached No Action Required, these costs may still be reimbursed. All costs are subject to pre-approval in order to be eligible.

Finally, this new benefit covers only the removal costs, and does not provide any coverage for additional contamination found in the course of the removal of the tank.

For more information on eligibility for this benefit, contact GAB Robins at (515) 276-8046.

## Secondary and remote dispensers need leak detection equipment

Inspectors are finding satellite dispensers (a secondary or remote dispenser from the primary or master dispenser that can fuel a vehicle with saddle tanks simultaneously) without the required line leak detection equipment.

The remote dispenser is metered out of the master dispenser and product is under pressure. If there is no line leak detector between the primary and secondary dispenser and a leak occurs, product will continue to be pumped out where the leak occurred.

Secondary dispensers and product lines must have all the attributes of a primary dispenser and

product line, including a line leak detector. These lines must not be

operated unless line leak detection is present.



Leak detection equipment is needed to prevent spills, like the diesel spill above.



# Converting to E-85? It's more than just switching products

Before converting a fuel path to E-85 (for flexible fuel vehicles) make sure you contact the DNR UST Section first to find out the special requirements for higher percent ethanol blend.

There are four concerns regarding high percent ethanol blends: compatibility, conductivity, phase separation and accelerated corrosion.

## Check compatibility

All equipment and components in the fuel path — starting with the fill pipe and ending with the nozzle at the dispenser — must be compatible with the ethanol blend fuels. Leak detection equipment must also be compatible.

Capacitance probes, which are used on some older tank systems, are not compatible with any percent of ethanol.

## Remember conductivity

Ethanol has a higher conductivity than gasoline and therefore interferes with the proper function of the capacitance probe.

Make sure the metals and floats used in your ATG system probe are compatible.

## Phase separation concerns

Phase separation is what happens when water in the bottom of the tank overwhelms the ethanol-gasoline blend and separates into a layer of gasoline on top and a layer of ethanol on the bottom.

Ethanol and gasoline blend well together, but ethanol's attraction of moisture is stronger. You must keep water out of an ethanol tank, no matter the percent of ethanol blend.

## Accelerated corrosion

Not only is the ethanol blend negated in phase separation, accelerated corrosion can also occur in steel tanks, and filters and fuel lines can be contaminated. Ethanol can also scour what internal corrosion might exist in a underground steel tank and cause a release of product.



The National Ethanol Vehicle Coalition, or NEVC, provides grants for labor and materials for converting the fuel path. If you are thinking about converting to E-85, contact the DNR for guidance.

There are expenses involved in converting tanks and dispensers to E-85 as well as downtime for installing compatible equipment and cleaning the tanks.

## Prevent product releases

The important point is don't simply switch products in your tank from diesel or gasoline to E-85 or from E-10 to E-85 without following the proper procedures and making sure the components in the fuel path are compatible.

Without proper conversions of components and equipment, your UST system can degrade and a product release occur.

States are beginning to issue guidelines for converting to E-85 because they are finding equipment and components that are incompatible with alcohol (e.g., submersible pumps, impellers, fill pipes, some fiberglass pipe adhesives, rubber bushings, connectors, fittings, adaptors, hoses, nozzles, etc.). Metals such as zinc, brass, lead and aluminum are not compatible with E-85.

## Making the switch

Do not simply switch from one product to E-85 without contacting the DNR, your petroleum equipment supplier and completing a checklist for converting to high percent ethanol.

If you're going to make a commitment to E-85, consider a new double-walled system specifically designed for E-85.

The DNR also tracks E-85 outlets across the state to assist consumers looking for E-85 stations to fill their flexible fuel vehicles.

After you have properly converted to E-85, please contact Tami Foster of the DNR's Energy Section at (515) 281-6558 so your station can be added to the list of E-85 sites.

Again, contact your petroleum equipment supplier, the National Ethanol Vehicle Coalition and the DNR for more information.

## Helpful Contacts:

Tom Collins, DNR: (515) 281-8879  
Paul Nelson, DNR: (515) 281-8779  
NEVC: 1-877-485-8595

E-85 Checklist available at:  
[www.iowadnr.com/ust/](http://www.iowadnr.com/ust/)

## Find it on the DNR's UST Web site



- Search the UST system database for information on all regulated UST sites
- Search for sites by UST Registration number or LUST, city, county, owner or facility name
- UST documents are available in the “Forms, Technical Resources, Manuals” section
- Online version of DNR Tanks Update

[www.iowadnr.com/land/ust/](http://www.iowadnr.com/land/ust/)

## DNR proposes changes to UST regulations

*Continued from page 1*

float vent valves (for overfill prevention) create problems — such as threats to public safety, health and the environment — instead of preventing problems? New regulations.



**Some ball floats on existing systems must be changed under new regulations.**

Should a tank system be allowed back into service after the power to the cathodic protection system has been off for more than six months?

These are just some of the situations that led the DNR to revise UST regulations.

### Not overnight changes

Many of these amendments are overdue, all of them address a public safety and/or environmental concern

and all of them were weighed carefully before being proposed.

For example, the ball float issue did not come out of the blue. Warnings about pressurizing a tank with vent restriction devices were issued as early as 1994 from PEI (RP100-94). Warnings were more forceful and extensive in RP 100-2000.

Enforcement of PEI's restrictions and a ban on new installations of ball floats were proposed after the DNR found public health threatened and environmental problems, such as transporters bathed in gasoline from tight fills blowing off or two fiberglass tanks cracking from being pressurized.

However, not everyone with a ball float valve for overfill protection has to change it. The ban on ball floats refers to new installation after the effective date set in the rules. Some ball float valves on existing systems must be changed.

For example, ball floats are currently not allowed on:

- Systems with a pumped or pressurized delivery

- Suction pumps with air eliminators
- Product transfers through remote fill pipes
- Emergency generator and heating oil tanks

The DNR will allow you to keep your valve in place if access to remove it is not available. However, be sure the replacement overfill mechanism engages before the vent valve.

There are potential negative aspects to changes in regulation. Added expenses for owners and operators were considered.

In the case of ball floats, there is the added expense of removing the ball float and installing an automatic shutoff, flapper valve or high level alarm.

This is not an inconsiderable expense, but when weighed against the risks posed by ball floats and the professional opinion that supported the ban on ball floats, the choice became clear.

# Make sure spill buckets are the correct size

Whatever you choose to call them – spill buckets, overfill containers or catchment basins – they are designed to prevent releases from transfers after the tight fill is disconnected.

One of the problems with some spill buckets is they are too small

(e.g., from two to five gallons).

What happens to the 15 or so gallons of product in the delivery hose once the transport driver disconnects from the tank?

It goes back in the tank if there is room for it and the driver didn't

UST facilities in its state and discovered that 40 percent of discharges or releases come from tank overfills.

When a spill bucket is undersized, you can figure out why overfills are the leading cause of releases in the state.

Discharges also occur because spill buckets are not liquid-tight. Do not transfer product to an UST that has a corroded, cracked, split or otherwise deteriorated spill container.

If overfills contribute that significantly to discharges in Maine, it's also happening in Iowa.

The next time you replace your spill

bucket, talk to your petroleum equipment supplier about the correct size. Unless your spill bucket can contain the product in the delivery hose, it's probably not big enough.

To lengthen the life of your spill bucket, the LUSTLINE article recommends the following:

- Check spill buckets immediately after the transfer of product and remove spilled fuel immediately.
- Sand, dirt and debris shorten the life of the spill bucket – keep them clean.
- Spill buckets must be liquid-tight. Replace cracked or broken spill buckets and lids. Check with your petroleum equipment supplier about cost and life expectancy for this equipment.
- If you don't keep spill buckets clean, you will shorten the life of your equipment. That's costly.
- Check clamps and seals regularly and tighten, adjust or replace as needed.

Don't assume spill buckets should last the life of the tank. Keep them free of fuel and debris and they will last longer.



Spill buckets need to be checked for proper size, cracks, corrosion and worn-out materials.

overfill it, otherwise it goes into the spill bucket. If your spill bucket holds less than the volume in the hose, you have a problem.

The State of Maine conducted a study on petroleum discharges at

## Spill buckets — they don't last a lifetime

Here's another state that found a problem with spill buckets. In the November issue of LUSTLINE, Dale Stoudemire with the South Carolina UST Section wrote about a study conducted on spill buckets in his state.

Of the 910 tanks sampled, 76 had leaking spill buckets (8.4 percent). The cause of the leaks in the spill buckets was degraded materials used in their manufacture. Many spill buckets are made of high-density polyethylene (HDPE) or have HDPE components.

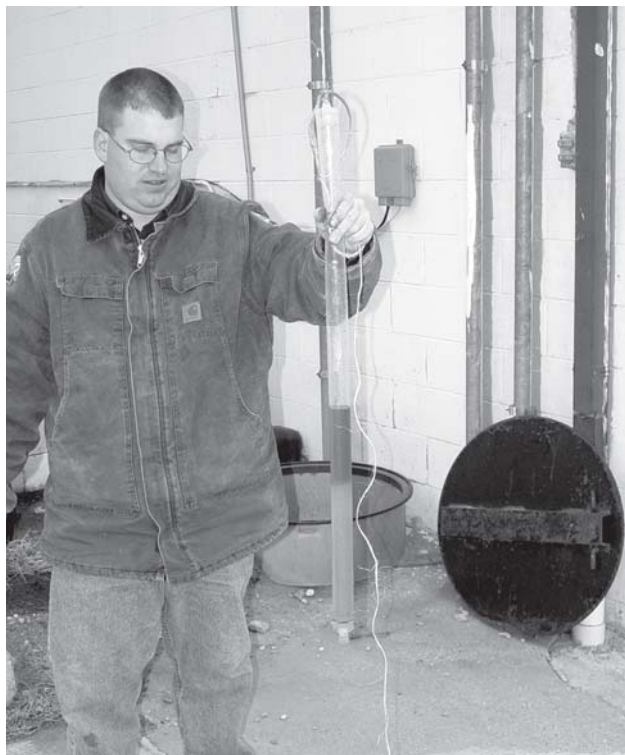
As states have learned from flex piping, "HDPE can degrade from long-term exposure to petroleum" (LUSTLINE, p. 27).

The article went on to state that many of the spill buckets installed by 1998 are approaching or have approached the end of their useful lives.

Spill buckets are not permanent. When replacing a spill bucket, consider new models that allow easy replacement without breaking concrete.

# DNR inspections find tank release detection, recordkeeping requirements to be most-violated UST regulations

Tank release detection was at the top of the list for the highest number of violations during Iowa UST inspections.



A DNR environmental specialist finds gas in a monitoring well during an inspection.

DNR UST inspectors completed approximately 1,300 inspections in a two-year period from January 2003 through January 2005. Of the sites, 60 percent were found to be in compliance with UST requirements, which leaves 40 percent of sites issued at least one violation.

As sites are inspected more frequently, and owners and operators become more familiar with UST system requirements, the compliance rate is expected to increase.

## Tank release violations top list

Among the violations, tank release detection was the most troublesome for owners with 271 violations over the two-year period.

Tank release detection violations include everything from neglecting to conduct monthly release detection monitoring to failing to test the tank at the level it is routinely filled or the level the tank ATG system was third party evaluated.

Improvement shows, however, as tank owners and operators had fewer violations in 2004 than 2003.

## Remember recordkeeping requirements

When your ATG system documents a "Pass" and it was conducted near the level the tank is routinely filled, file that Pass in your record for that month.

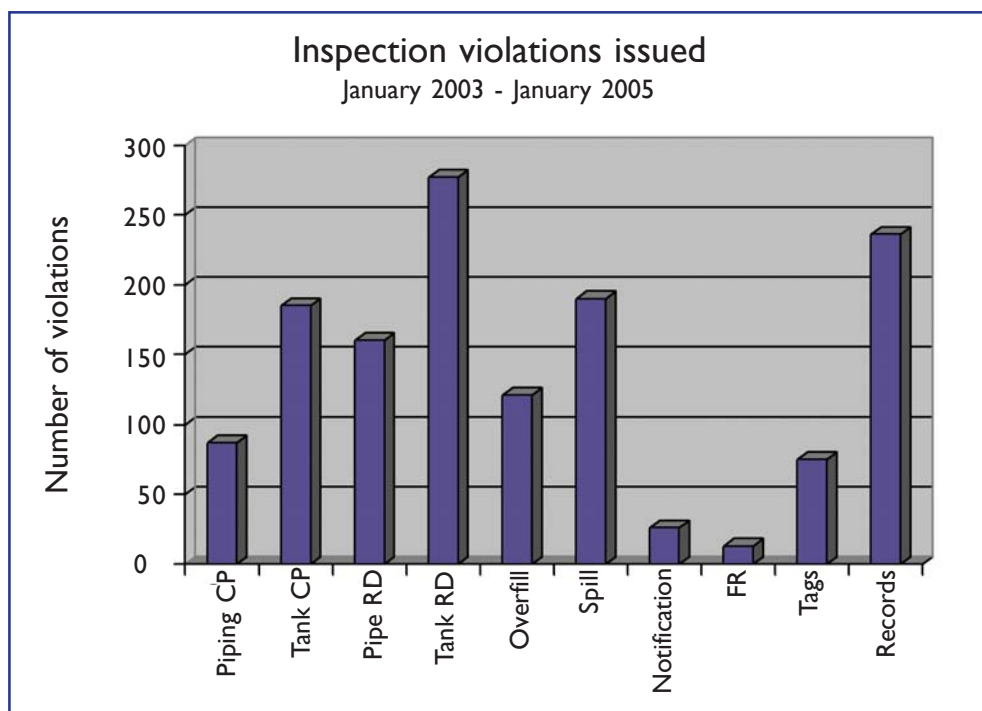
Please keep these monthly release detection records together for the tanks and product piping. Always keep a year's worth of leak detection monitoring records. It makes it easier on the owner/operator and the inspector when these records are requested during an inspection.

Obviously, release detection records are invaluable when it comes to investigating whether a release occurred. Please keep them organized and readily available.

## Financial responsibility shows improvement

One area of significant improvement is financial responsibility (FR). Owners and operators are knowledgeable about FR requirements, but it wasn't always that way.

Before 1995, the DNR was doing a lot of FR enforcement. In 2003-04, FR received the least number of violations for any year previously (13). Three FR violations were issued in 2004.





## Flex connectors: not exactly flexible

Flex connectors provide flexibility at the tank and dispenser ends of each product line and also at vent risers.

Flex connectors should not be twisted, kinked (look at the stainless steel braiding) or bent severely. They must not be flexed beyond what the manufacturer allows.

If a flex connector is bent beyond the minimum bend radius, pinched, kinked or twisted, it can rupture and cause a leak.

Inspectors have found leaks in both ends of the piping where flex connectors are located.

*Check sumps to make sure your flex connectors are not twisted, kinked or severely bent.*

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Help the DNR save paper by signing up to receive the electronic version of DNR Tanks Update. You will be e-mailed the latest edition of the newsletter at least twice a year.

To receive DNR Tanks Update electronically, contact Bonnie Garrison at: [Bonnie.Garrison@dnr.state.ia.us](mailto:Bonnie.Garrison@dnr.state.ia.us)

The newsletter will arrive as a PDF file, which requires Adobe Reader, a program offered free at [www.adobe.com/products/acrobat/readstep2.html](http://www.adobe.com/products/acrobat/readstep2.html).

## DNR Tanks Update

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Department of Natural Resources

**Jeff Vonk**, Director

**Wayne Gieselman**, Administrator,  
Environmental Services Division

**Tim Hall**, Bureau Chief,  
Land Quality

**Jim Humeston**, Supervisor,  
Underground Storage Tank Section

**Jessie Rolph**, Editor  
**Tom Collins**, Contributor  
**Bonnie Garrison**, Contributor  
**Paul Nelson**, Contributor

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NATURAL RESOURCES  
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